

AMAZONIANA	IX	4	549 – 558	Kiel, Juni 1986
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A new species of *Chactopsis* from Brazil (Scorpiones, Chactidae)

by

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(accepted for publication: January 1986)

Abstract

Chactopsis amazonicus, new species (Scorpiones, Chactidae) is described based on 11 specimens (6 males and 5 females), collected in Reserva Ducke and in the Tarumã-Mirim area (Manaus region), State of Amazonas, Brazil. *C. amazonicus* is the fifth species described for the genus and the second one mentioned for Brazil. Some comments concerning the taxonomic position and the geographic distribution of the species are also included.

Keywords: Scorpiones, Chactidae, Amazonia, "Terra-Firme", inundation forest.

Résumé

Chactopsis amazonicus, nouvelle espèce (Scorpiones, Chactidae) est décrite à partir de 11 exemplaires (6 mâles et 5 femelles) collectés dans la Reserva Ducke et dans la zone du Tarumã-Mirim (région de Manaus), Etat d'Amazonas, Brésil. *C. amazonicus* est la cinquième espèce décrite pour le genre et la deuxième mentionnée pour le Brésil. Sont incluses des remarques concernant la position taxonomique et la répartition géographique des espèces.

Resumo

E descrita como nova a espécie *Chactopsis amazonicus* (Scorpiones, Chactidae) baseada em 11 exemplares (6 machos e 5 fêmeas) coletados na Reserva Ducke e no Tarumã-Mirim (região de Manaus), Estado do Amazonas, Brasil. *C. amazonicus* é a quinta espécie descrita para o gênero e a segunda citada para o Brasil. São incluídos comentários referentes à posição taxonômica e à distribuição geográfica das espécies.

Introduction

KRAEPELIN (1912) described a new genus and species of chactid scorpion, *Chactopsis insignis*, from a single female from Perú. Despite repeated citations, both the genus and the species have remained poorly known. MELLO-LEITÃO (1945) revised the scorpion fauna of South America, yet had not seen *C. insignis* and merely gave a translation of KRAEPELIN's original description. SCORZA (1954a, b, and c) reported *C. insignis* from Venezuela, although he actually had a different species (GONZÁLEZ-SPONGA in press). Subsequently, VACHON (1974) studied the holotype of *C. insignis*, and illustrated its unusual trichobothrial pattern. Finally, GONZÁLEZ-SPONGA (1984, and in press) studied the genus *Chactopsis* from Venezuela and described three new species.

We have examined specimens from the Amazon basin of Perú and Brasil. The Peruvian specimens are *C. insignis*, and herein we redescribe this poorly known species. The Brazilian specimens represent two different species. A single female from Tapuniquara, Amazonas, represents *Chactopsis anduzei* GONZÁLEZ-SPONGA, one of the species recently described from Venezuela, and previously known only from the type locality. Numerous specimens collected in the vicinity of Manaus represent a new species which is described below.

Chactopsis insignis KRAEPELIN (Figs. 1, 10 - 14, Map 1)

Chactopsis insignis KRAEPELIN 1912: 87 - 88, figs. 10 - 12; MELLO-LEITÃO 1932: 34, 1945: 117; WERNER 1934: 369; (nec) SCORZA 1954a: 5, 13 - 14, figs. 6 - 7, 1954b: 158, 1954c: 198 (misidentifications); BÜCHERL 1969: 769; (nec) ESQUIVEL DE VERDE 1969 (in: ESQUIVEL DE VERDE & MACHADO-ALLISON 1969: 31 - 32 (misidentifications); AGUILAR & MENESES 1970: 2; VACHON 1974: 932; SOLEGLAD 1976: 300; FRANCKE 1977: 76; (nec) GONZÁLEZ-SPONGA 1977: 304 (misidentification).

Type data. — Holotype female from the Upper Amazonas (Huallaga River), between Moyobamba and Iquitos, Departamento de Loreto, Perú (Map 1). Deposited in the Muséum National d'Histoire Naturelle, Paris. Examined.

Redescription. — Based on the holotype female (Fig. 1). Measurements in Table 1.

Coloration. Base color brown, with dense variegated fuscous on the body, pedipalps and legs. Carapace brown, with anterior and posterolateral margins lighter; lateral eyes surrounded with black pigment. Coxosternal region yellow brown, with diffuse to moderate fuscous. Tergites brown, densely infuscate. Sternites yellow brown, diffusely infuscate, VII darker than preceding ones. Pectines and genital operculi yellowish brown. Metasomal segments I - V reddish brown, with dense variegated fuscous, especially on keels. Vesicle slightly lighter than segment V; sting with reddish base, and dark reddish brown tip. Pedipalps reddish brown: femur densely infuscate, tibia with moderate variegated fuscous, chela only with carinae and fingers infuscate. Chelicera yellow brown, with dense fuscous distally and on fingers; teeth reddish. Legs pale yellow brown, with moderately dense variegated fuscous.

Morphology. Prosoma: carapace shiny, with moderately dense, rounded granulation; anterior border slightly concave; median longitudinal and posterior lateral furrows distinct; median ocular tubercle slightly anterior of center. Three pairs of lateral eyes, posterior pair considerably smaller.

Mesosoma: tergites I - VI smooth, without keels or granules; tergite VII with four vestigial carinae. Sternum pentagonal, longer than wide. Genital operculum composed of two small, oval plates. Pectines: middle lamella wider at base than marginal lamella; without fulcra; 8 pectinal teeth, distal tooth slightly wider. Sternites: smooth, acarinate; stigmata medium-sized, oval elongate.

Metasoma: segment I with 8 keels, lacking ventral submedians; segments II - IV with 10 keels, ventral submedians weak to vestigial. Dorsolateral keels on I - IV with distal granule enlarged. Segment V with 7 weak to vestigial keels, with sharp granulation ventrally. Vesicle slightly flattened, acarinate, moderately granulose ventrally.

Chelicera: movable finger with one basal and two subdistal teeth.

Pedipalps: Femur with three incomplete keels; external and ventral faces smooth, dorsal and internal faces with sparse, medium granulation. Tibia with two moderate, almost complete keels (dorsal internal and dorsal median); smooth throughout. Chela without keels; dentate margin of fingers with numerous denticles loosely arranged into four longitudinal rows. Trichobothriotaxia C: femur orthobothriotaxic, with 3 trichobothria; tibia neobothriotaxic with 33 trichobothria, 7 ventrally (Figs. 13 - 14); chela orthobothriotaxic, with 26 trichobothria (Figs. 10 - 12).

Legs: tarsomere II with moderately dense ventral setation, without discernible rows or other pattern.

Male. — The only male available is immature. It can not be adequately compared against the two adult females.

Variability. — The only significant variation is in pectinal tooth counts: male 9 - 9, holotype female 8 - 8, adult female 9 - 9.

Specimens examined. — PERU: **Departamento Loreto**; between Iquitos and Moyobamba, no date (no collector), holotype female (MNHN - RS - 0759); Iquitos, 1923 (no collector), one adult female (AMNH); **Departamento Ucayali**; Pucallpa, 6 November 1946 (J. C. Pallister), one juvenile male (AMNH).

Chactopsis amazonicus, new species (Figs. 2 - 9, 16 - 21, Map 1)

Type data. — Holotype male from Reserva Ducke, km 26 on AM - 010, 25-VII-1978 (N. Penny), Amazonas, Brasil (Map 1). Deposited in the Instituto Nacional de Pesquisas da Amazônia, Manaus.

Etymology. — The specific name refers to the region where this scorpion occurs.

Description. — Based on holotype male. Measurements on Table 1.

Coloration. Base color is yellow brown, with diffuse to moderate variegated fuscous throughout. Prosoma: carapace reddish brown, with frontal and posteromedian regions slightly lighter; lateral eyes surrounded with black pigment; venter yellow to orange, vestigially infuscate. Mesosoma: tergites I - VII reddish brown, like carapace, with moderate variegated fuscous; pectines and genital operculi yellow brown; sternites yellow brown, with VII darker, moderately infuscate. Metasoma: segments I - V reddish brown, slightly darker than prosoma and mesosoma; with fuscous spots laterally and ventrally; vesicle same color as segment V, with reticulated fuscous laterally and ventrally; stinger with base reddish and tip dark reddish black. Chelicera: yellow brown, infuscate distally and on fingers; teeth reddish. Pedipalps: base color reddish brown, like carapace; femur moderately infuscate; tibia with diffuse variegations; chela with carinae infuscate, fingers yellow brown. Legs yellowish, with diffuse fuscous spots.

Morphology. Prosoma: carapace moderately granulose; anterior margin feebly concave; median longitudinal and posterior lateral furrows distinct; median ocular tubercle distinctly anterior of middle; three pairs of lateral eyes, posterior pair vestigial (Fig. 15). Sternum pentagonal, wider than long.

Mesosoma: tergites I - VI moderately to densely granulose, without keels; VII with submedian and lateral keels vestigial. Pectines: middle lamella longer than marginal lamella; without fulcra; 9 teeth, distal tooth slightly wider (Fig. 17). Genital operculum divided, with two subovate to subtriangular plates. Sternites densely punctate, acarinate; stigmata medium-sized, oval elongate.

Metasoma: segments I - IV with 8 weak keels, ventral submedians obsolete. Dorsolateral keels on I - IV with distal granule enlarged. Segment V with 7 weak to vestigial keels, intercarinal spaces moderately granulose (Fig. 18). Vesicle flattened, fusiform, acarinate and smooth (Fig. 18).

Chelicera: movable finger with one basal and two subdistal teeth (Fig. 21).

Pedipalps: Femur with four complete keels; external face smooth; dorsal, internal and ventral faces coarsely granulose (Figs. 8 - 9). Tibia with five distinct keels; external and ventral faces smooth, dorsal and internal faces sparsely granulose. Chela without granulation, acarinate except for vestiges on fixed finger. Dentate margin on fingers with numerous denticles loosely arranged in four longitudinal rows (Fig. 20). Trichobothriotaxia C: femur orthobothriotaxic, with 3 trichobothria (Figs. 8 - 9); tibia

neobothriotaxic, with 33 trichobothria, seven on ventral face (Figs. 5 - 7); chela orthobothriotaxic with 26 trichobothria (Figs. 2 - 4).

Legs: tarsomere II with moderately dense setae ventrally, not arranged in rows.

Description of allotype female. — Measurements in Table 1. Differs from male as indicated below. Coloration. In general darker, more heavily infuscate than male.

Morphology. Overall less coarsely granulose; carapace and tergites punctate to smooth (Fig. 16). Metasomal segments II - IV with weak ventral submedian carinae. Vesicle more oval than on male (Fig. 19). Pectinal teeth vary considerably in size between sexes, those of male are about twice as long as on the female; 8 teeth per comb.

Variability. — The variation in pectinal tooth counts was as follows: on males eight combs with 9 teeth, and two combs with 10 teeth; on females one comb with 7 teeth, and three combs with 8 teeth.

Specimens examined. — BRASIL: Amazonas; Reserva Ducke (AM - 010) (emergence trap 2 - B), 25-VII-1978 (N. Penny), holotype male (INPA); same locality, 23-I-1983 (M. P. M. Aidar), female allotype (INPA); Manaus, 11-06-76 (Máximos), one adult male paratype (AMNH); Reserva Ducke, 15-XI-1977 (Jorge Arias), one juvenile male paratype (INPA); same locality, 22-XI-1977 (B. C. Rattcliffe), one adult female paratype (INPA); same locality, 29-XI-1977 (Jorge Arias), one adult female paratype (INPA); same locality, 27-XII-1977 (Jorge Arias), one adult male paratype (INPA); same locality, 17-I-1978 (Jorge Arias), one adult male paratype (INPA); same locality, 13-VIII-1981 (M. C. Coltro), one adult female paratype (MNHN, Paris); Tarumã Mirim (inundation forest), k - 14 - TM, 26-X-1982 (J. Adis), one juvenile female paratype (INPA); same locality, k - 33 - RD5, 17-I-1983 (J. Adis), one juvenile male paratype (INPA).

Interspecific comparisons

Three of the five species of *Chactopsis* are known from one sex only, and for another species only one juvenile male is known; thus, the following comparisons are preliminary. Until adult specimens of both sexes are known for all taxa, it is not feasible to attempt any phylogeny reconstructions, or to attempt to explain the origin and geographic distribution of this Amazonian genus.

Chactopsis sujirima GONZÁLEZ-SPONGA, is known only from the holotype female, collected in Departamento Atabapo, Territorio Federal Amazonas, Venezuela (Map 1). It has a pectinal tooth count of 7 - 7, the lowest in the genus; and it has only 31 trichobothria on the tibia (1 internal, 2 dorsal, 22 external, and 6 ventral). These two characters help to distinguish it from all others.

Chactopsis barajuri GONZÁLEZ-SPONGA, is known only from the holotype male, collected in Distrito Piar, Estado Bolívar, Venezuela (Map 1). It has 34 trichobothria on the tibia (1 internal, 2 dorsal, 24 external, and 7 ventral), which readily differentiates it from the other four species.

Chactopsis anduzei GONZÁLEZ-SPONGA, is known from six females collected in Departamento Atures, Territorio Federal Amazonas, Venezuela; and one adult female from Tapuniquara, Amazonas, Brasil [VIII-1964 (Pe. Pereira), Museu de Zoologia, Univ. São Paulo, cat. no. DZ-8755] (Map 1). It has trichobothrium *tb* on the distal one-third of the fixed finger, whereas the other four species have it on the basal one-third. In addition, trichobothrium *db* is distal to *Et*₄, whereas on the other species *db* is basal or next to *Et*₄ but not distal to it.

Chactopsis insignis KRAEPELIN, is known from two adult females and one juvenile male from Peru (Map 1). Trichobothria *Eb*₁ - *Eb*₂ - *Eb*₃ on the pedipalp chela form an angle of approximately 120°, whereas on the three Venezuelan species this angle is 140° to 150°, and in *C. amazonicus* it is about 170°.

Chactopsis amazonicus and *C. insignis* appear to be more closely related to each other than to any of the Venezuelan species. They differ from each other in the following additional characters. First, *C. amazonicus* is smaller than *C. insignis* (Table 1). Second, *C. amazonicus* is lighter in color, and has pale pedipalp fingers; whereas *C. insignis* is considerably darker, and has pedipalp fingers which are heavily infuscate, appearing almost black. Third, the arrangement of the ventral trichobothria on the

tibia differs between these two species (Figs. 7 and 14), as do the positions of several trichobothria on the pedipalp chelae (Figs. 2 - 4 and 10 - 12).

Acknowledgments

We thank J. Adis, N. Penny, B. C. Rattcliffe, and V. Py-Daniel, all of the Instituto Nacional de Pesquisas da Amazônia, Manaus (INPA), N. I. Platnick of the American Museum of Natural History, New York (AMNH), and L. M. Neme of the Museu de Zoologia da Universidade de São Paulo (MZUSP), for the loan of specimens used in this study. M. Gaillard prepared the illustrations, and M. Vachon allowed us to use Figure 1. Special thanks go to M. A. González-Sponga for sharing with us an unpublished manuscript. Finally, W. D. Sissom and S. A. Stockwell kindly reviewed the manuscript.

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Table 1: Measurements (in millimeters) of the two species of *Chactopsis* described in this contribution.

	<i>C. insignis</i>	<i>C. amazonicus</i>	
	♀ - holotype	♂ - holotype	♀ - allotype
Total length	39.6	27.9	31.2
Carapace length	4.7	3.1	3.6
Anterior width	3.5	2.2	2.7
Posterior width	5.9	3.5	4.0
Mesosoma length	12.9	8.5	11.0
Metasoma length	22.0	16.3	16.6
Segment I length/width	2.2/3.3	1.5/2.1	1.5/2.4
Segment II length/width	2.3/3.0	1.5/2.0	1.6/2.1
Segment III length/width	2.5/2.8	1.7/1.9	1.8/2.1
Segment IV length/width	2.9/2.8	2.2/1.9	2.2/2.0
Segment V length/width/depth	5.3/2.9/2.5	4.1/2.0/1.7	4.1/2.1/1.8
Telson length	6.8	5.3	5.4
Vesicle length/width/depth	4.8/2.3/1.9	3.9/1.7/1.5	3.9/1.8/1.5
Aculeus length	2.0	1.4	1.5
Pedipalp length	17.7	11.6	13.7
Femur length/width	4.2/1.5	2.8/1.0	3.3/1.2
Tibia length/width	5.2/2.1	3.5/1.4	4.1/1.7
Chela length/width/depth	8.3/2.0/2.0	5.3/1.3/1.3	6.3/1.6/1.6
Movable finger length	5.0	3.0	3.6

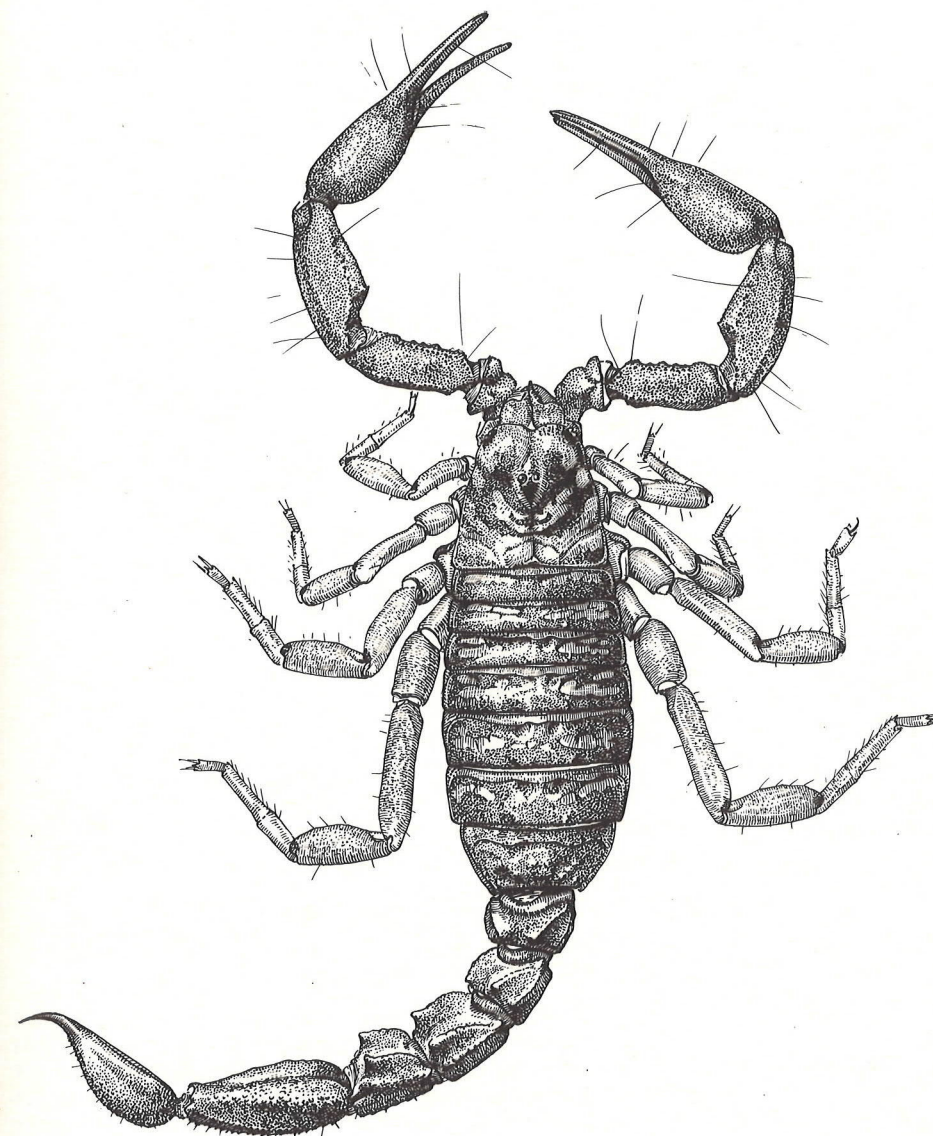
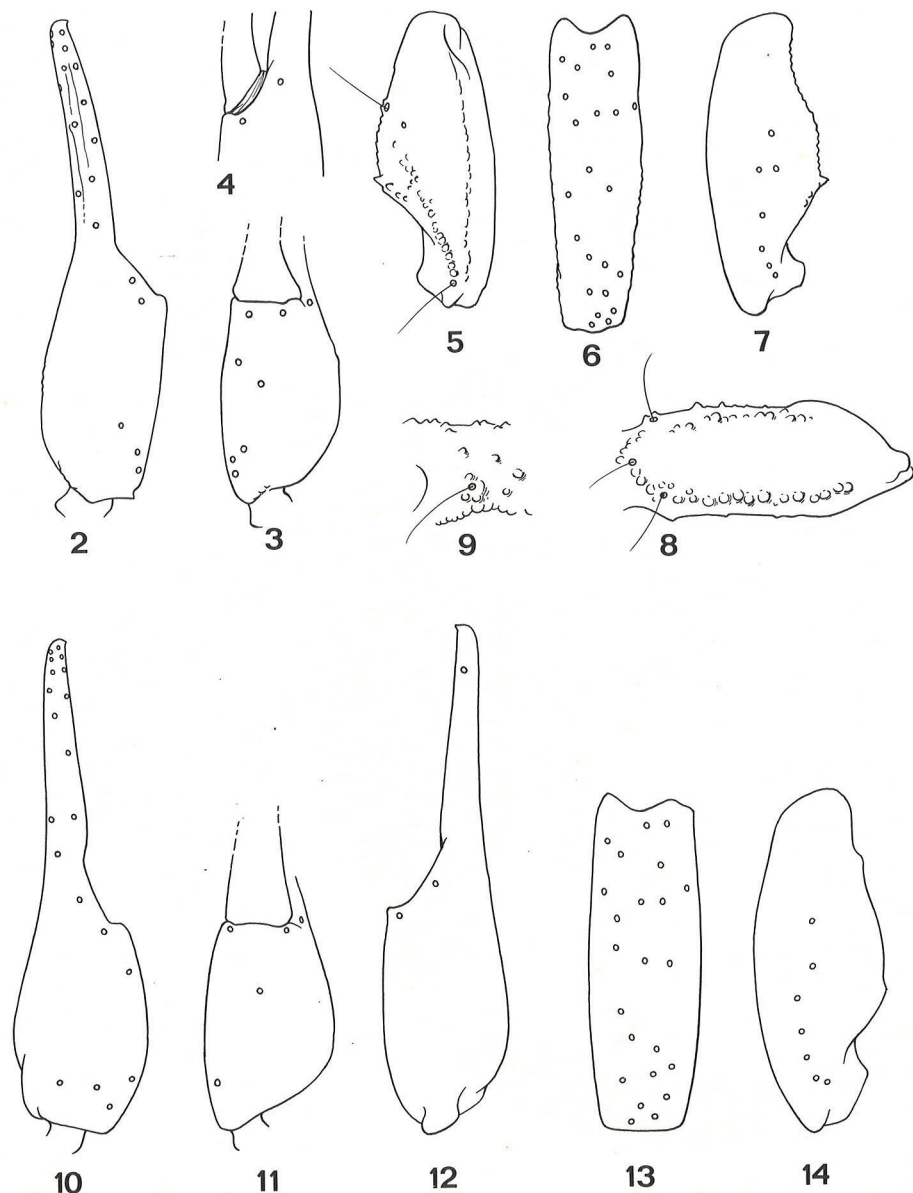


Fig. 1:
Holotype female of *Chactopsis insignis* KRAEPELIN, from Perú.

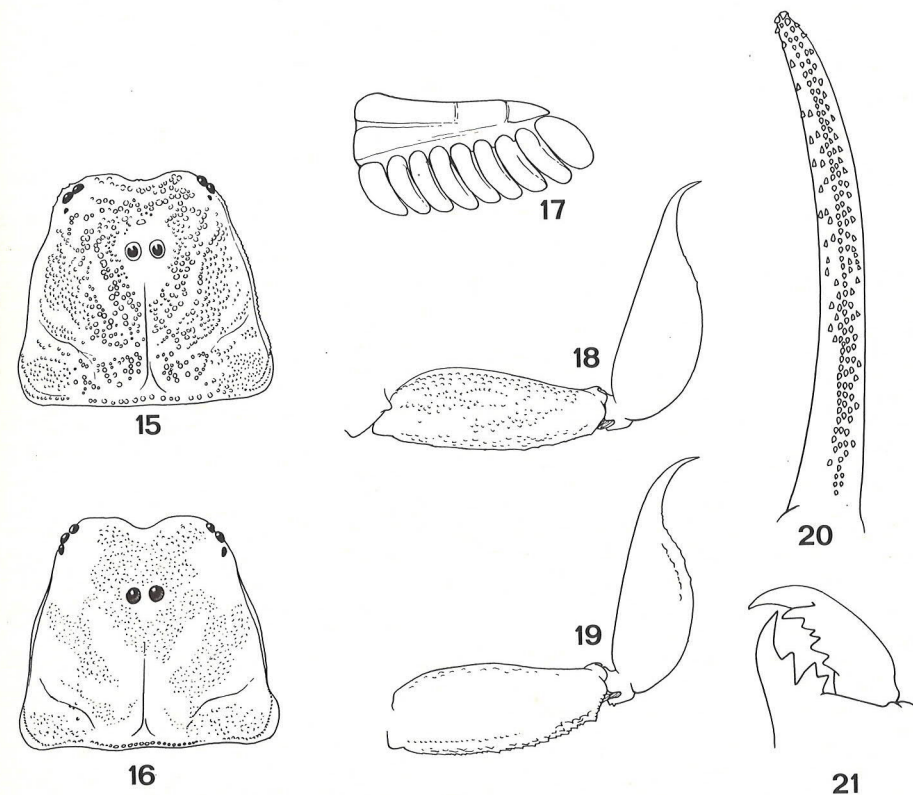


Figs. 2 - 9:

Trichobothrial pattern on holotype male of *Chactopsis amazonicus*, new species, from Manaus, Brasil:
 2: chela, external aspect; 3: chela, ventral aspect; 4: chela, internal aspect; 5: tibia, dorsal aspect;
 6: tibia, external aspect; 7: tibia, ventral aspect; 8: femur, dorsal aspect; 9: femur, detail of internal aspect.

Figs. 10 - 14:

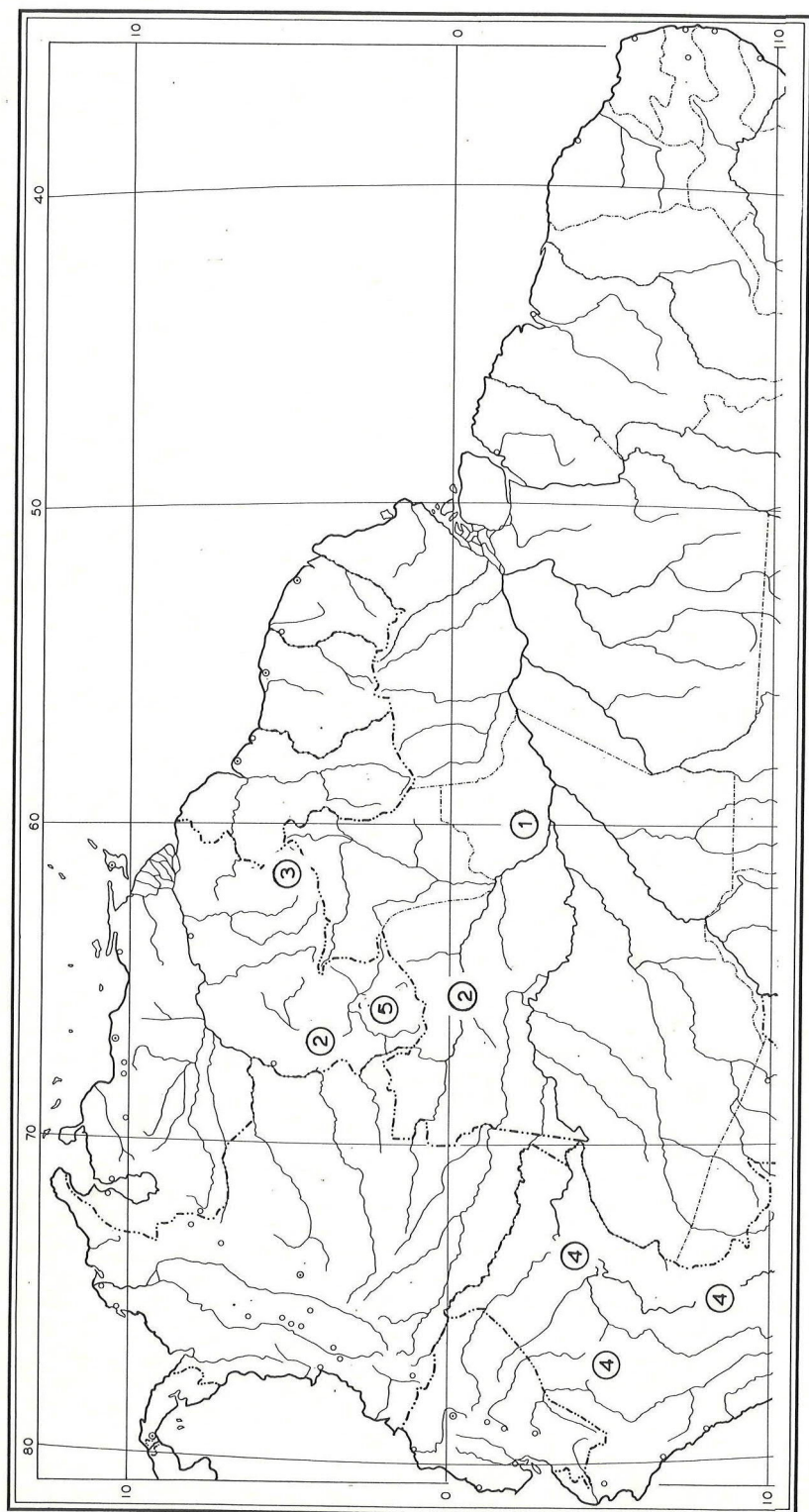
Trichobothrial pattern on holotype female of *Chactopsis insignis* KRAEPELIN, from Perú:
 10: chela, external aspect; 11: chela, ventral aspect; 12: chela, internal aspect; 13: tibia, external aspect;
 14: tibia, ventral aspect.



Figs. 15 - 21:

Morphological aspects of *Chactopsis amazonicus*, new species:

15: carapace of holotype male; 16: carapace of allotype female; 17: pectine of holotype male;
 18: metasomal segment V and telson of holotype male; 19: metasomal segment V and telson of
 allotype female; 20: dentition on pedipalp chela finger of holotype male; 21: chelicera of holotype male.



Map 1:
Distribution of the genus *Chactopsis* KRAEPELIN in the Amazonian Basin: 1: *C. amazonicus*, new species;
2: *C. anduzei* GONZÁLEZ-SPONGA; 3: *C. barajuri* GONZÁLEZ-SPONGA; 4: *C. insignis* KRAEPELIN;
5: *C. sujirima* GONZÁLEZ-SPONGA.